Presentation by

COL Thomas Smith
Commander
Memphis District

Mississippi River Commission High Water Inspection Public Meeting

Caruthersville, Missouri

March 30, 2009

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COL Thomas Smith
Commander
Memphis District

Mississippi River Commission High Water Inspection Public Meeting

Tunica, Mississippi

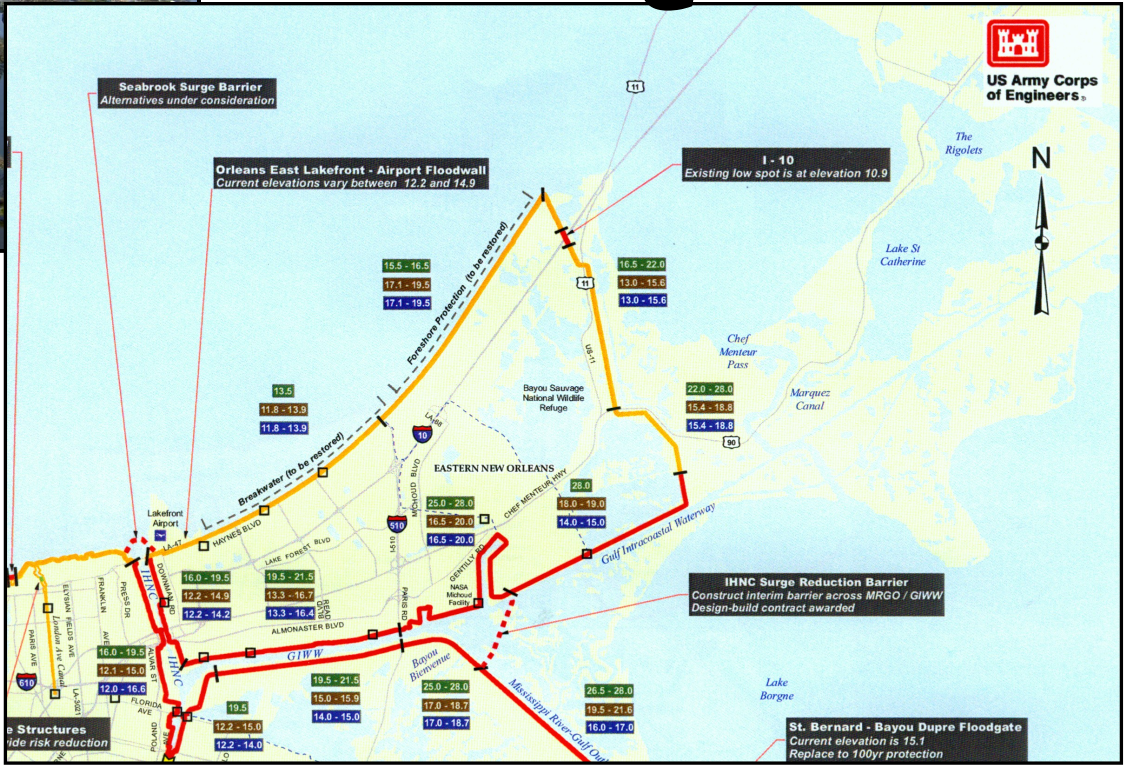
March 31, 2009

Our Overseas Contingency Operations volunteers

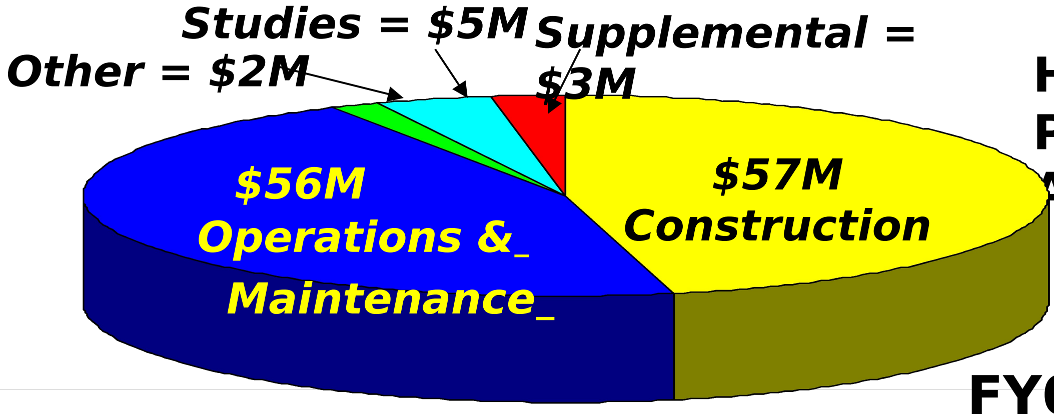
RKEY
45
unnamed peak
Arbīl
Mosūl
As Sulaymānīyah
Kirkuk
35
Buḩayrat ath Tharthār
Sāmarrā'
BAGHDAD
Ar Ramādī
Ar Ruṭbah
JOR.
Buḩayrat ar Razāzah
Karbalā'
Al Kūt
Tigris
An Najaf
Euphrates
An Nāşirīyah
Shatt al
Al Başrah
Umm Qasr
SAUDI ARABIA
KUWAIT

66
UZBEKISTAN
TAJIKISTAN
Amu Darya
TAN
Wākhān (Wakhan Corridor)
Shīr Khān
Mazār-e Sharīf
Kondoz
Nowshāk
HINDU KUSH
36
Towraghondī
Bagrām
KABUL
Jalālābād
Herāt
Ghaznī
Shīndand
INDIA
1972 Line of Control
Kandahār
Zaranj
IRAN
PA
0 100 200 km
0 100 200 mi

Regional Interdependence

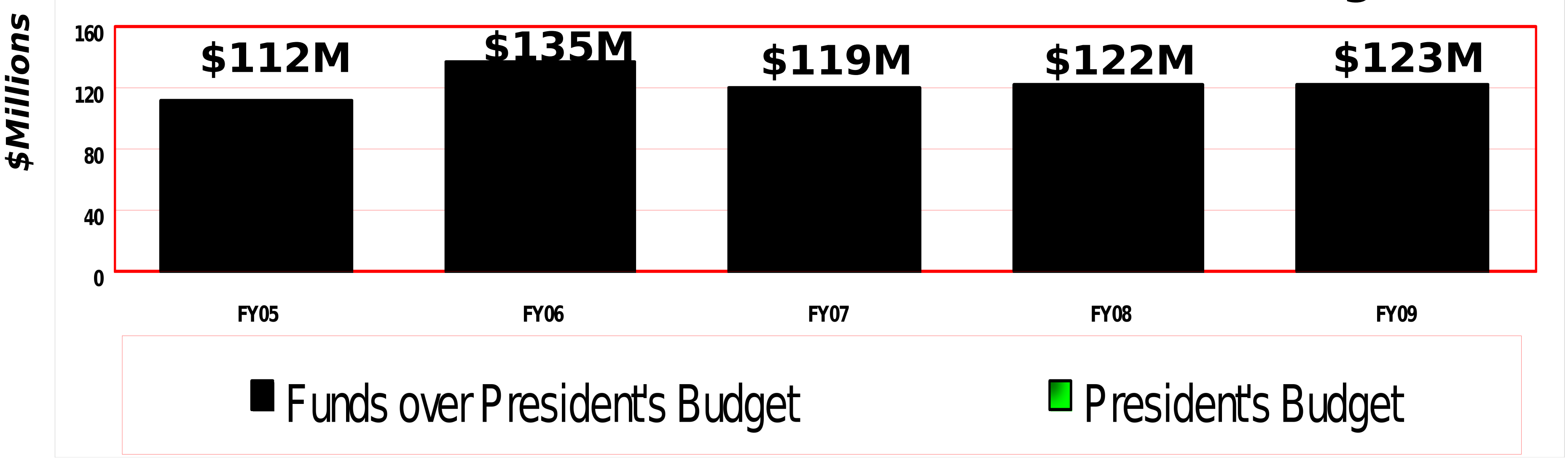

Seabrook Surge Barrier
Alternatives under consideration
Orleans East Lakefront - Airport Floodwall
Current elevations vary between 12.2 and 14.9
I - 10
Existing low spot is at elevation 10.9
US Army Corps of Engineers
The Rigolets
N
Lake St Catherine
Chef Menteur Pass
Marquez Canal
11
11
US-11
90
15.5 - 16.5
17.1 - 19.5
17.1 - 19.5
Foreshore Protection (to be restored)
16.5 - 22.0
13.0 - 15.6
13.0 - 15.6
13.5
11.8 - 13.9
11.8 - 13.9
Bayou Sauvage National Wildlife Refuge
22.0 - 28.0
15.4 - 18.8
15.4 - 18.8
LA-68
10
Breakwater (to be restored)
EASTERN NEW ORLEANS
CHEF MENTEUR HWY
28.0
18.0 - 19.0
14.0 - 15.0
Lakefront Airport
LA-47
HAYNES BLVD
MICHOUD BLVD
510
I-510
25.0 - 28.0
16.5 - 20.0
16.5 - 20.0
Gulf Intracoastal Waterway
LAKE FOREST BLVD
GENTILLY RD
NASA Michoud Facility
IHNC Surge Reduction Barrier
Construct interim barrier across MRGO / GIWW
Design-build contract awarded
IHNC
DOWNMAN RD
16.0 - 19.5
12.2 - 14.9
12.2 - 14.2
19.5 - 21.5
13.3 - 16.7
13.3 - 16.4
READ BLVD
PARIS RD
ALMONASTER BLVD
ELYSIAN FIELDS AVE
FRANKLIN AVE
PRESS DR
PARIS AVE
London Ave Canal
610
16.0 - 19.5
12.1 - 15.0
12.0 - 16.6
ALVAR ST
LA-3021
FLORIDA AVE
GIWW
IHNC
19.5 - 21.5
15.0 - 15.9
14.0 - 15.0
Bayou Bienvenue
25.0 - 28.0
17.0 - 18.7
17.0 - 18.7
Mississippi River-Gulf Out
26.5 - 28.0
19.5 - 21.6
16.0 - 17.0
Lake Borgne
19.5
12.2 - 15.0
12.2 - 14.0
POLAND AVE
e Structures
ide risk reduction
St. Bernard - Bayou Dupre Floodgate
Current elevation is 15.1
Replace to 100yr protection

CIVIL WORKS PROGRAM



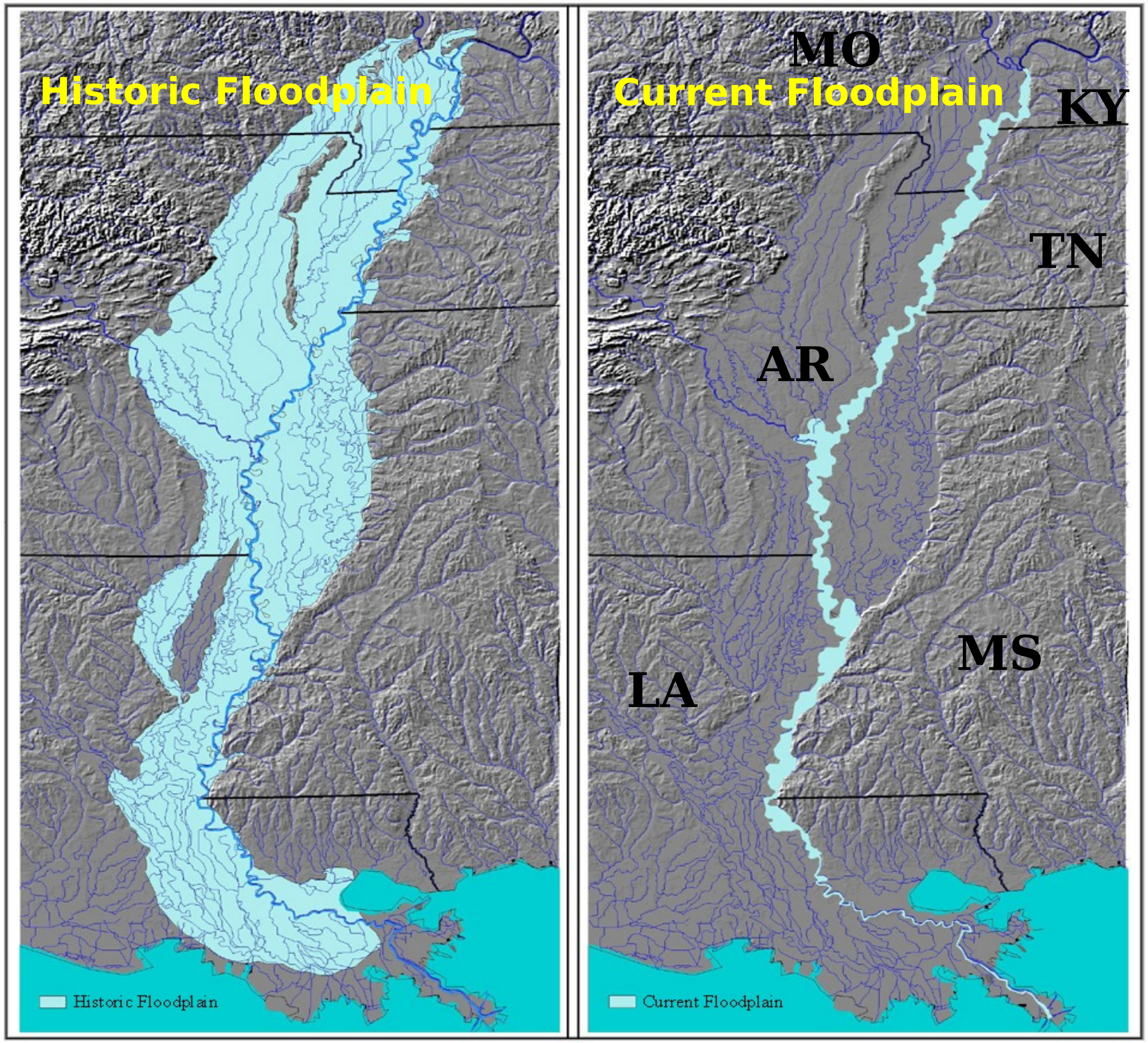
HISTORY & PROJECTIONS -- DIRECT APPROPRIATIONS

FY09 Total Program: $12



Our roots: why we do what we do.

Flood of 1927 inundated 26,000 square miles of the Mississippi Valley


Historic Floodplain
Current Floodplain
MO
KY
TN
AR
MS
LA
Historic Floodplain
Current Floodplain

Flood Risk Management

Setting up a Crisafulli pump during last spring's high w

MRL Construction

Drilling pilot holes prior to relief well installation at Baders-Cottonwood Point, MO.

Testing new relief wells at Caruthersville, MO.

Mississippi River Levees (MRL) Maintenance

Before and After

Mounds Creek Culvert, Illinois

Cache River Levee, Illinois

St. Francis Basin, Arkansas and Missouri Construction

Completed Crittenden County Bridge Mile 20.01

St. Francis Maintenance

Glennonville, Missouri Scour Repair

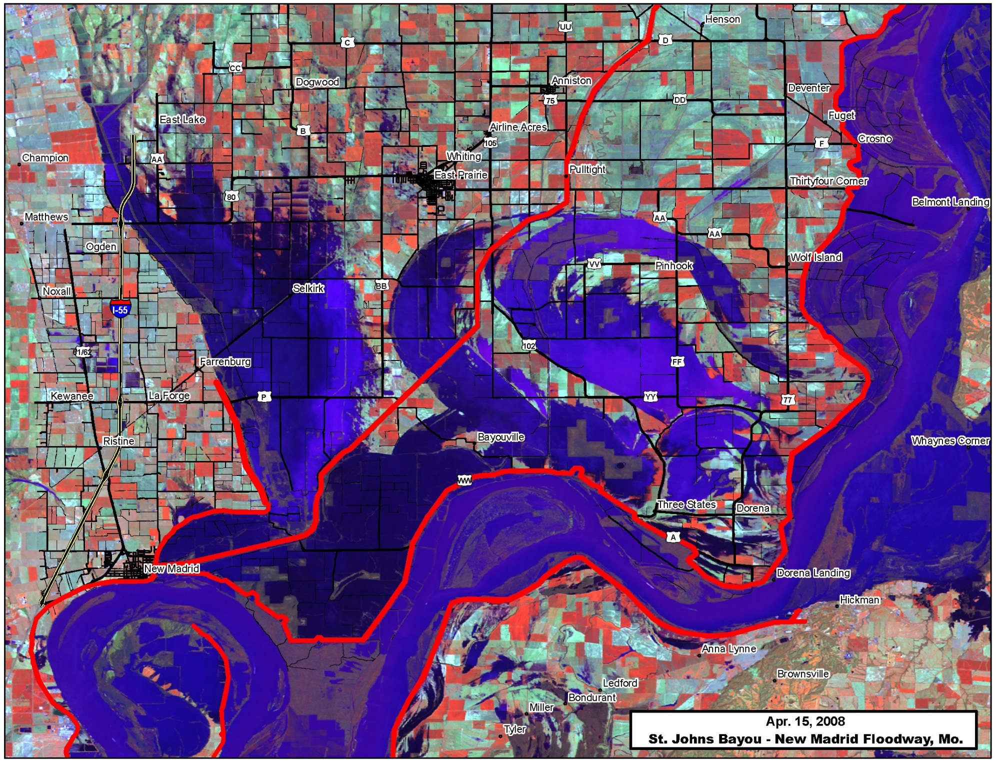
St. Francis River below Ark. Hwy 90

White River Backwater, Arkansas

Graham Burke Stoplog Slot Replacement

Graham Burke Roof Replacement

St. Johns Bayou & New Madrid Floodway, Missouri

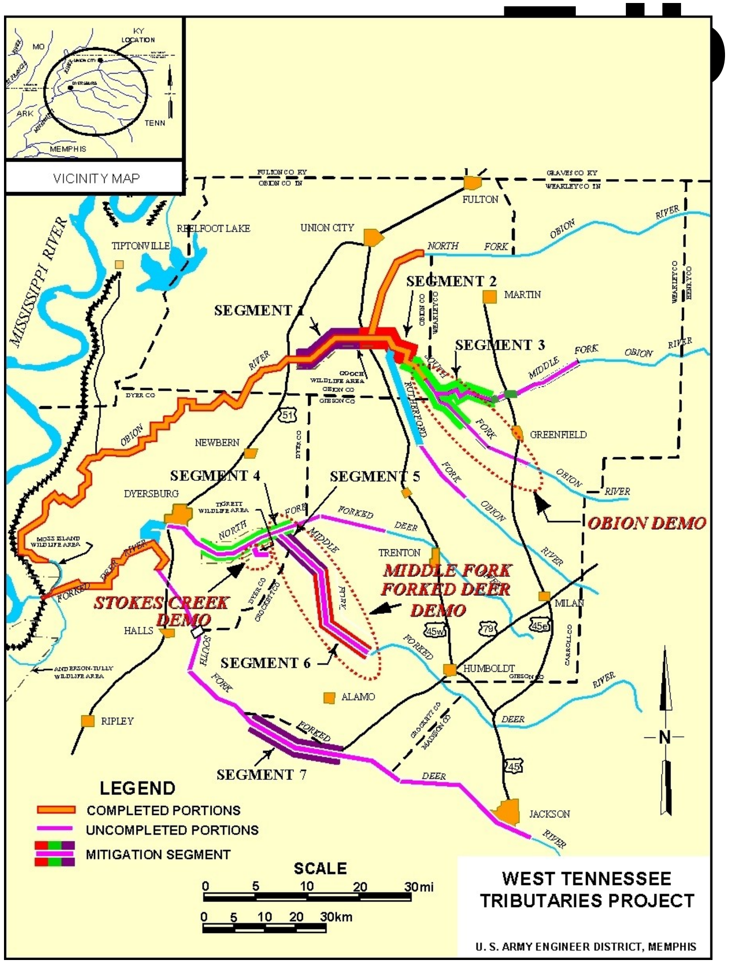

Henson
UU
D
C
CC
Dogwood
Anniston
75
DD
Deventer
East Lake
B
Airline Acres
105
Fuget
F
Crosno
Champion
AA
Whiting
East Prairie
Pulltight
Thirtyfour Corner
80
Belmont Landing
Matthews
AA
AA
Ogden
VV
Pinhook
Wolf Island
Noxall
Selkirk
BB
I-55
61/62
102
Farrenburg
FF
Kewanee
La Forge
P
YY
77
Ristine
Bayouville
Whaynes Corner
WW
Three States
Dorena
A
New Madrid
Dorena Landing
Hickman
Anna Lynne
Brownsville
Ledford
Bondurant
Miller
Tyler

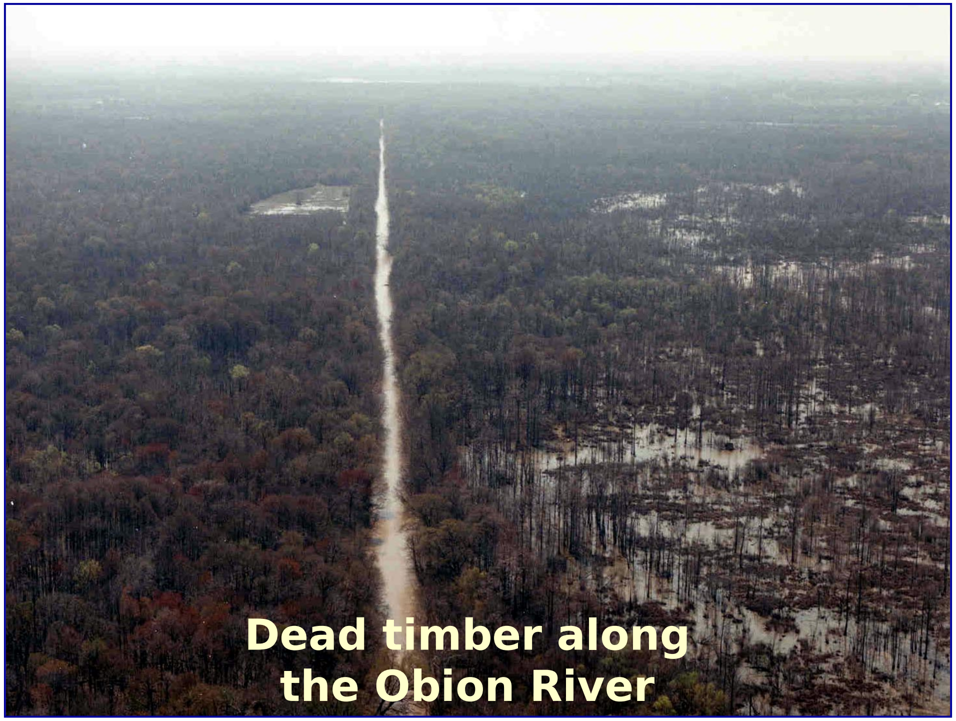
Apr. 15, 2008
St. Johns Bayou - New Madrid Floodway, Mo.

Last year’s flooding

Current condition of work site

West Tennessee Tributaries


KY
LOCATION
MO
ARK
TENN
MEMPHIS
UNION CITY
DYERSBURG
VICINITY MAP
FULTON CO KY
OBION CO TN
GRAVES CO KY
WEAKLEY CO TN
FULTON
REELFOOT LAKE
UNION CITY
TIPTONVILLE
MISSISSIPPI RIVER
NORTH FORK OBION RIVER
SEGMENT 2
MARTIN
SEGMENT 1
OBION CO
WEAKLEY CO
HENRY CO
SEGMENT 3
MIDDLE FORK OBION RIVER
SOUTH FORK
RUTHERFORD FORK
GOOCH WILDLIFE AREA
OBION CO
GIBSON CO
DYER CO
51
GREENFIELD
OBION RIVER
NEWBERN
SEGMENT 4
SEGMENT 5
DYERSBURG
TIGRETT WILDLIFE AREA
OBION DEMO
MOSS ISLAND WILDLIFE AREA
NORTH FORK
MIDDLE FORK
FORKED DEER RIVER
TRENTON
MIDDLE FORK FORKED DEER DEMO
STOKES CREEK DEMO
DYER CO
CROCKETT CO
MILAN
HALLS
45w
79
45e
CARROLL CO
SEGMENT 6
SOUTH FORK
HUMBOLDT
GIBSON CO
ANDERSON-TULLY WILDLIFE AREA
ALAMO
RIPLEY
FORKED DEER
CROCKETT CO
MADISON CO
DEER RIVER
N
SEGMENT 7
45
JACKSON
RIVER
LEGEND
COMPLETED PORTIONS
UNCOMPLETED PORTIONS
MITIGATION SEGMENT
SCALE
0 5 10 20 30mi
0 5 10 20 30km
WEST TENNESSEE TRIBUTARIES PROJECT
U. S. ARMY ENGINEER DISTRICT, MEMPHIS



Dead timber along the Obion River

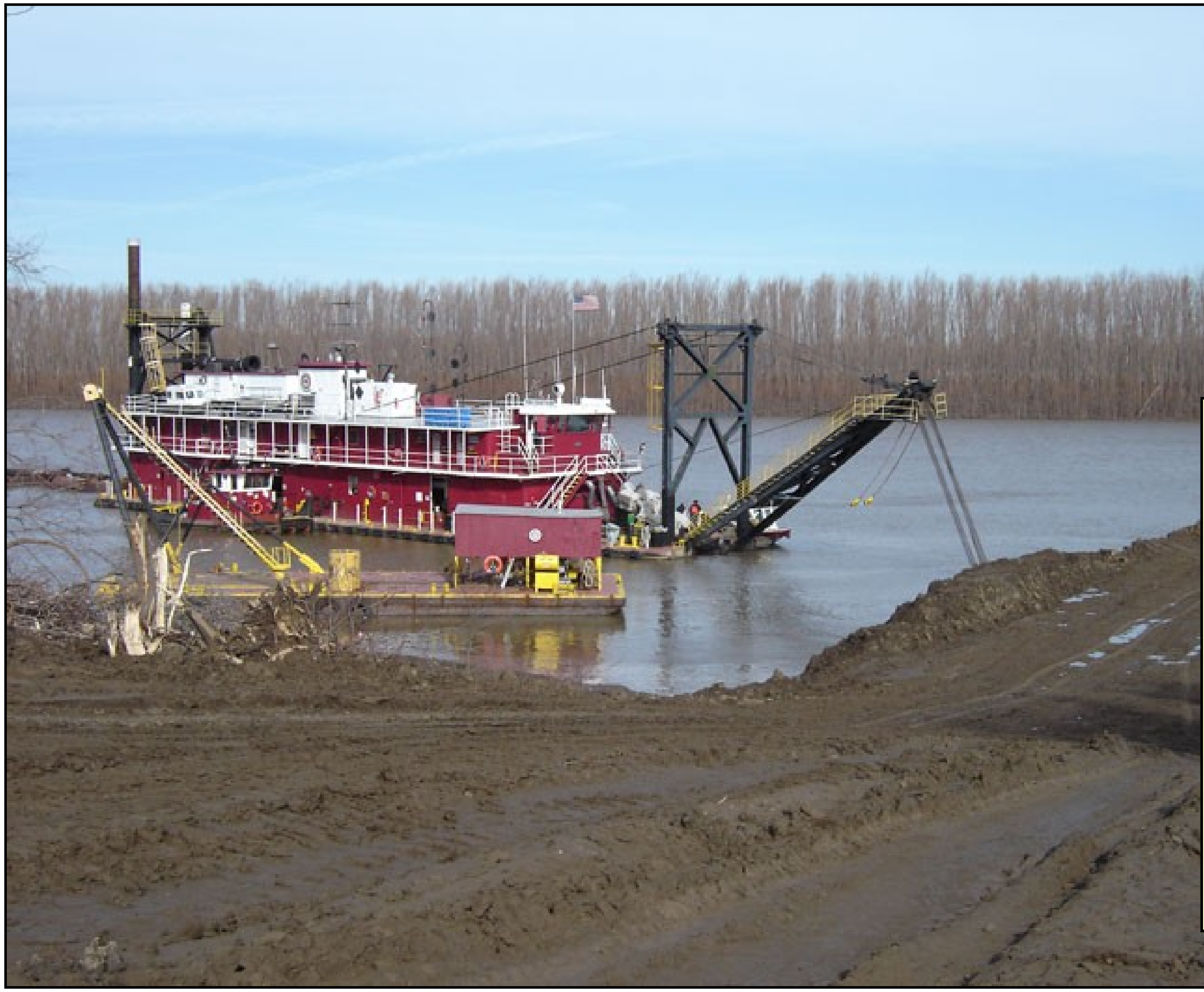
Navigation

Dredging

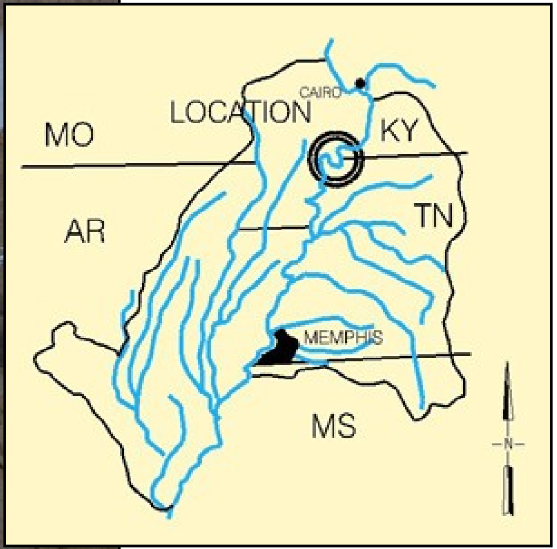
Bank Grading

Dike construction

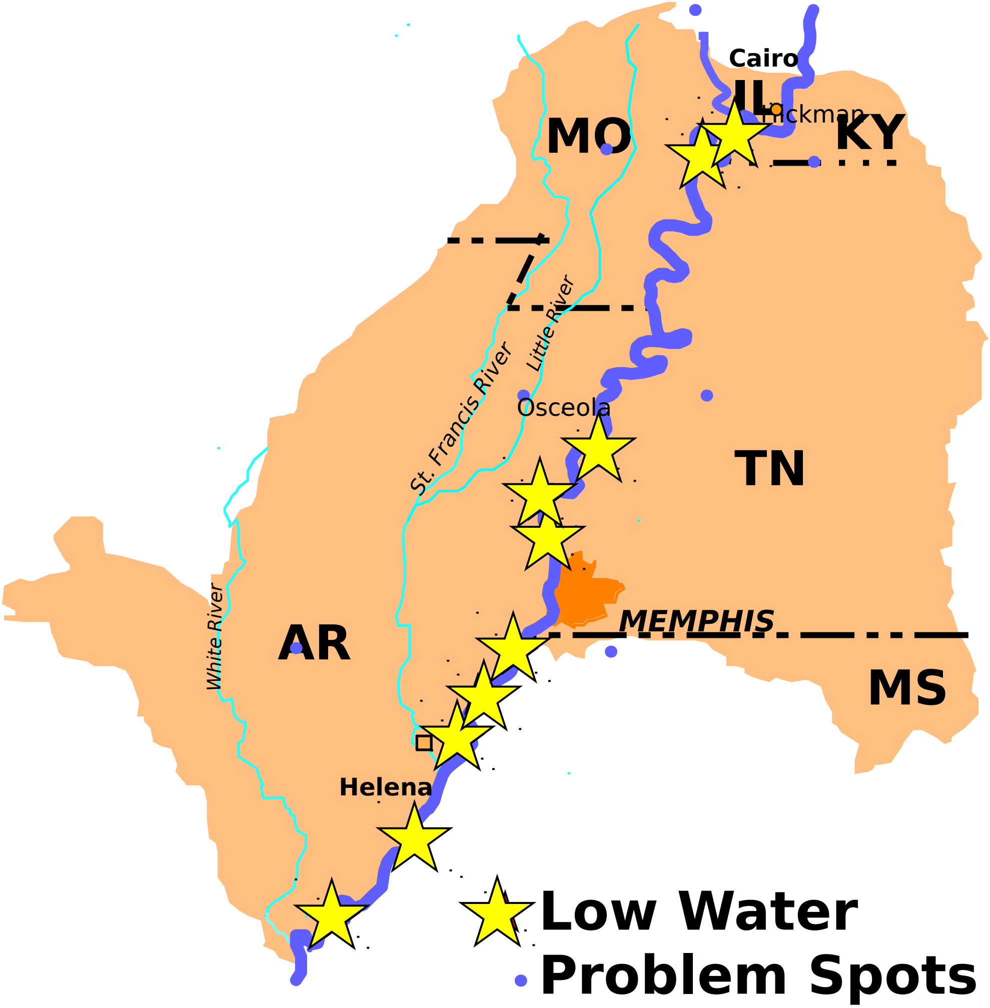
Northwest Tennessee Harbor



The cutterhead Dredge Pontchartra in in action


MO
LOCATION
CAIRO
KY
AR
TN
MEMPHIS
MS
N

Navigation dredging


Cairo
IL
Hickman
MO
KY
Little River
St. Francis River
Osceola
TN
MEMPHIS
AR
White River
MS
Helena
★ Low Water
• Problem Spots

Elvis Stahr Harbor, Hickman, KY

Osceola Harbor,

Wolf River

New Madrid County Harbor,

New Madrid City Harbor, MO

Helena Harbor, Phillips County, AR

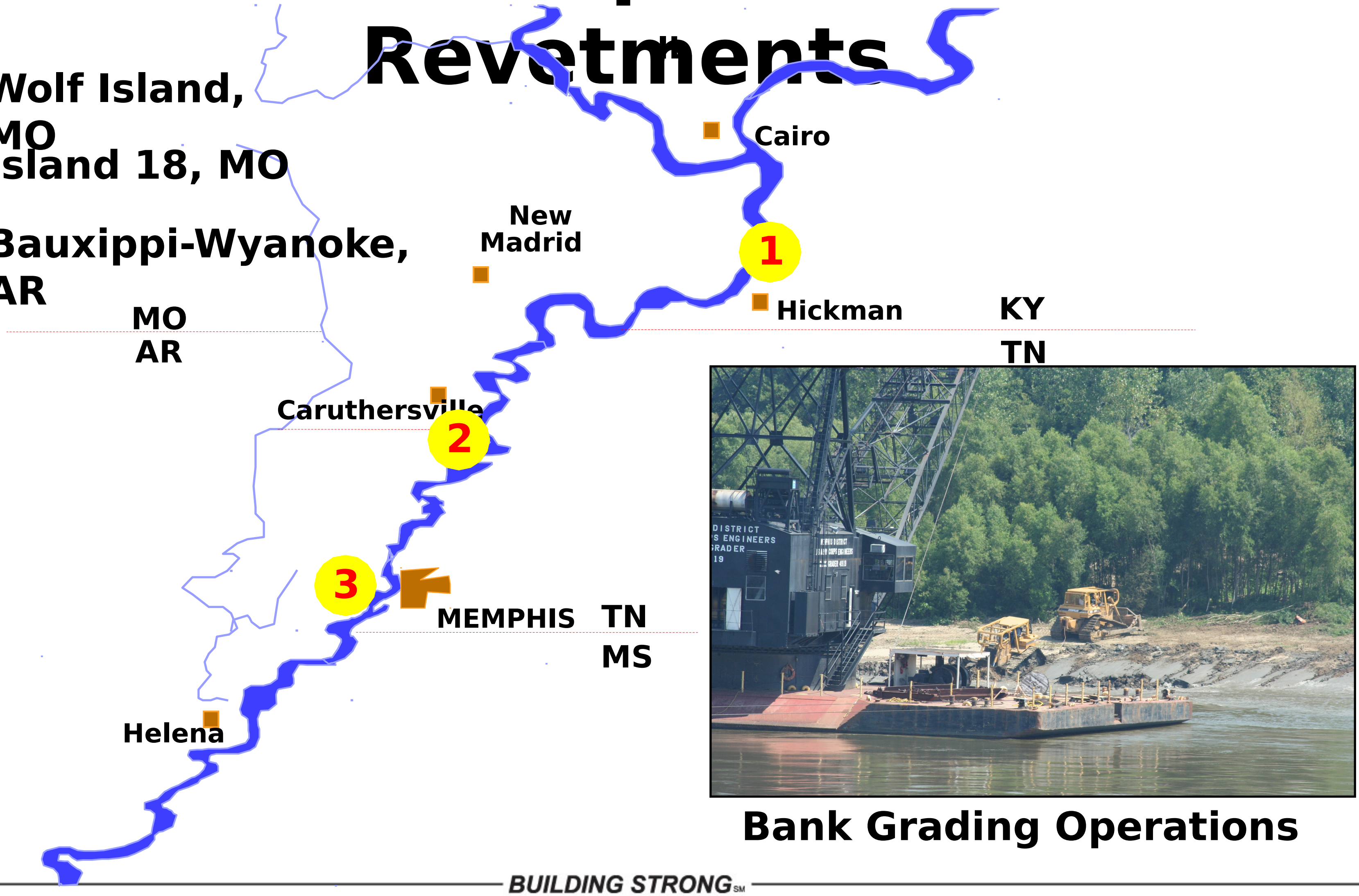
Memphis Harbor,

Caruthersville Harbor, MO

Helena Harbor, AR

Channel Improvements Revetments

1. **Wolf Island, MO**
2. **Island 18, MO**
3. **Bauxippi-Wyanoke, AR**

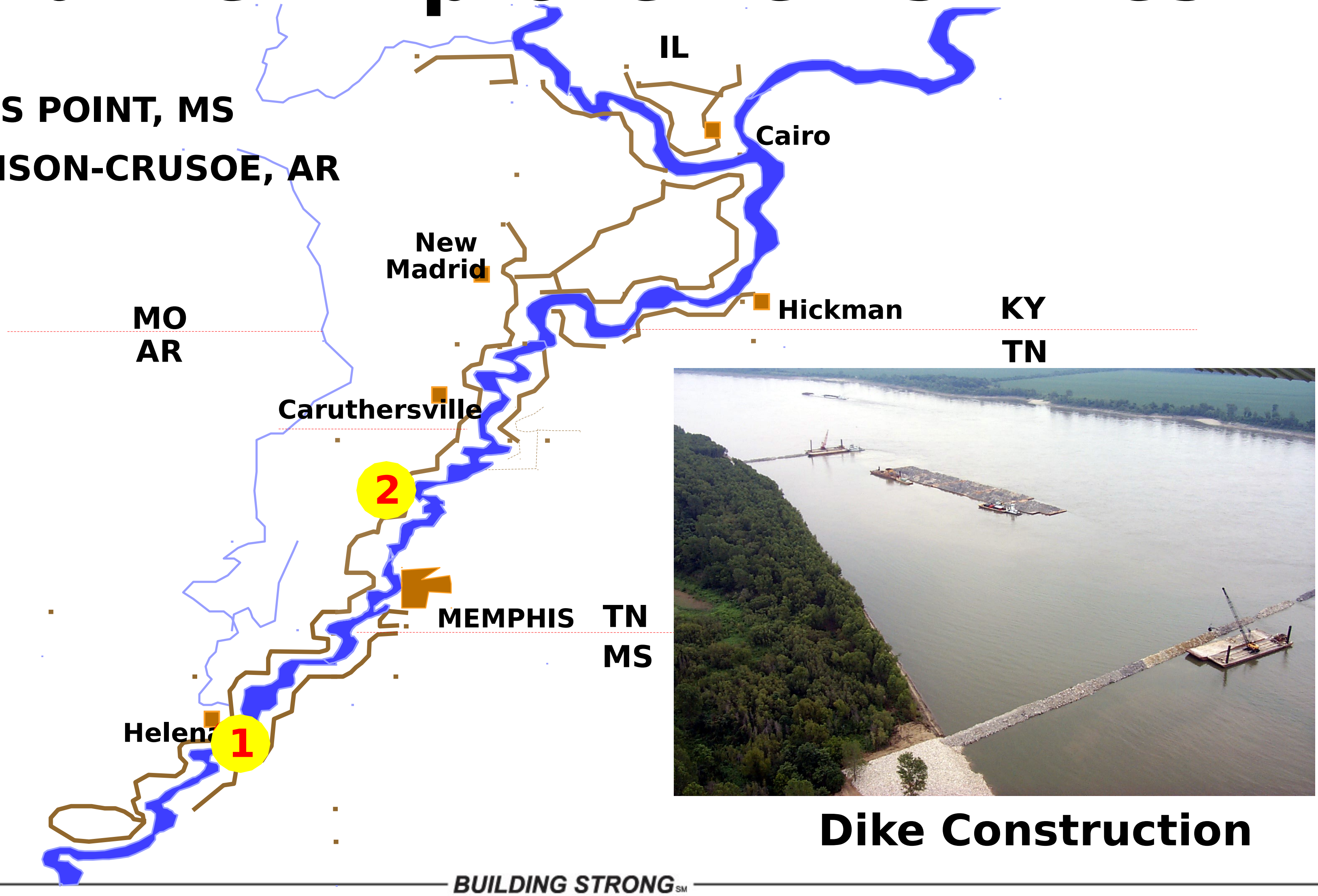

Cairo
New Madrid
1
Hickman
KY
TN
MO
AR
Caruthersville
2
3
MEMPHIS
TN
MS
Helena

DISTRICT
'S ENGINEERS
RADER
19

Bank Grading Operations

Channel Improvements Dikes

1 **FRIARS POINT, MS**
2 **ROBINSON-CRUSOE, AR**


IL
Cairo
New Madrid
Hickman
KY
TN
MO
AR
Caruthersville
2
MEMPHIS
TN
MS
Helena
1

Dike Construction

White River, Arkansas

Dredge Integrity dredging the White River

Snagging Operations

Environmental Stewardship

Lower Mississippi River Resource Assessment

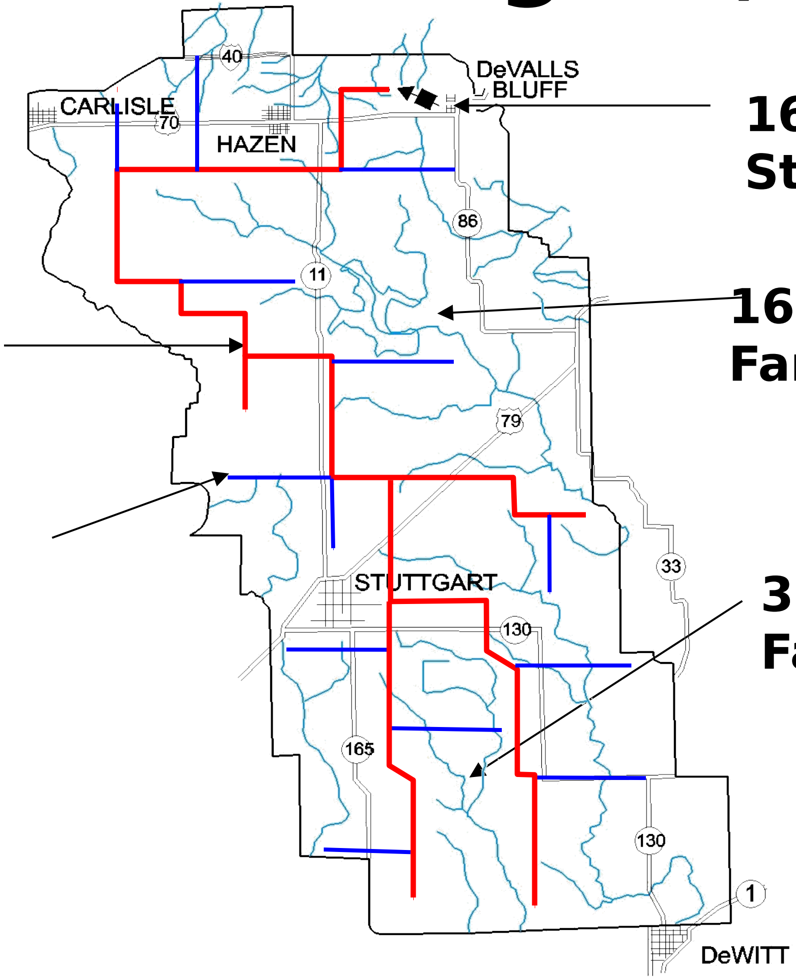
Assessing River-related Management, Habitat Restoration and Recreation.

Lower Obion, Tennessee Ecosystem Restoration Project

Interior of one of the waterfowl ponding units.

Levee in the initial stage of construction.

Grand Prairie Region, Arkansas


40
DeVALLS BLUFF
CARLISLE
70
HAZEN
86
11
79
33
STUTTGART
130
165
130
1
DeWITT

1640 cfs Pump Station

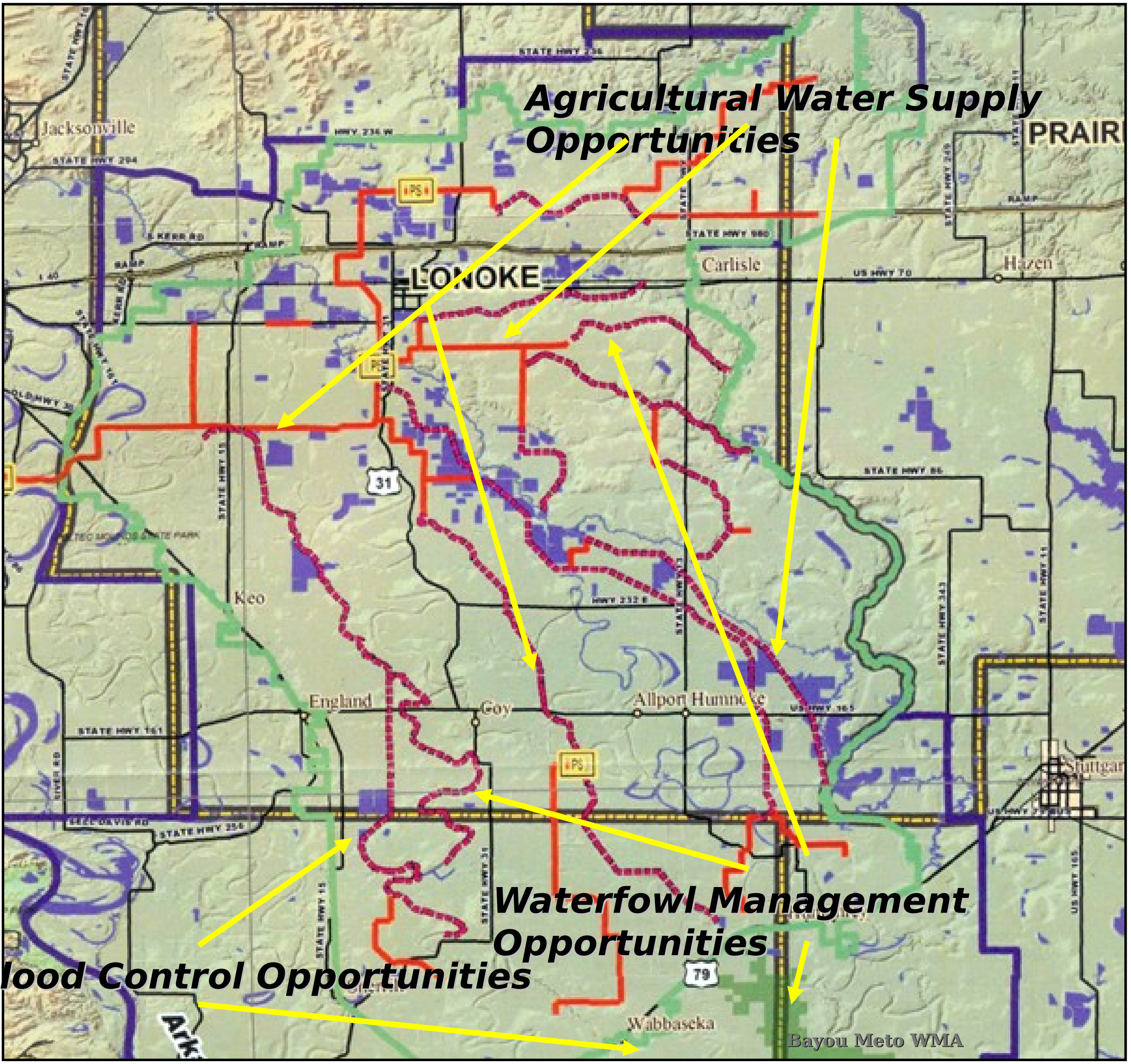
164 Completed On-Farm Reservoirs

102 Miles of Canals

290 Miles of Pipelines

330 Planned On-Farm Reservoirs

Bayou Meto Basin, Arkansas

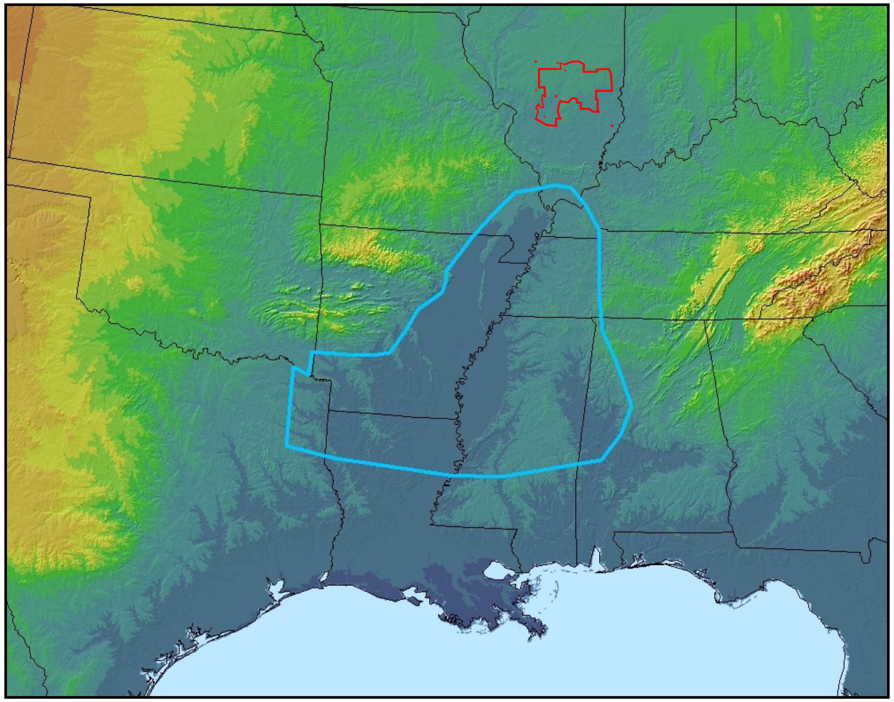

Jacksonville
LONOKE
Carlisle
Hazen
PRAIRI
Keo
England
Coy
Allport
Humnoke
Stuttgart
Wabbaseka
Bayou Meto WMA
STATE HWY 294
HWY 236 W
STATE HWY 236
STATE HWY 980
US HWY 70
STATE HWY 86
HWY 232 E
US HWY 165
STATE HWY 161
STATE HWY 256
US HWY 79
31
79
PS

Agricultural Water Supply Opportunities

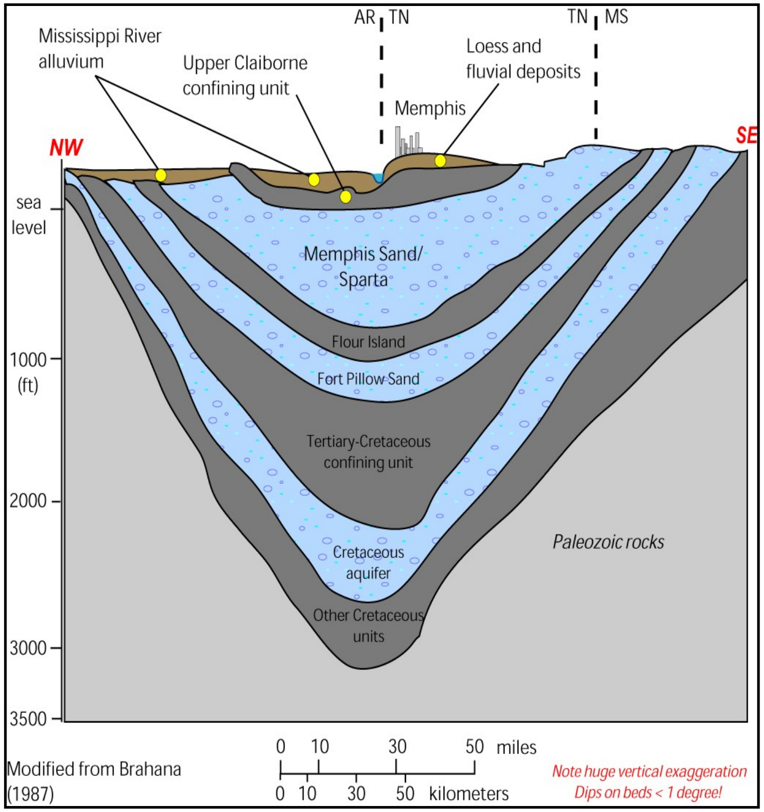
Waterfowl Management Opportunities

Flood Control Opportunities

Upper Mississippi Embayment
Tennessee, Mississippi, Arkansas



Embayment Area


AR TN
TN MS
Mississippi River alluvium
Upper Claiborne confining unit
Loess and fluvial deposits
Memphis
NW
SE
sea level
Memphis Sand/ Sparta
Flour Island
Fort Pillow Sand
1000 (ft)
Tertiary-Cretaceous confining unit
2000
Cretaceous aquifer
Paleozoic rocks
Other Cretaceous units
3000
3500
0 10 30 50 miles
0 10 30 50 kilometers

Modified from Brahana (1987)

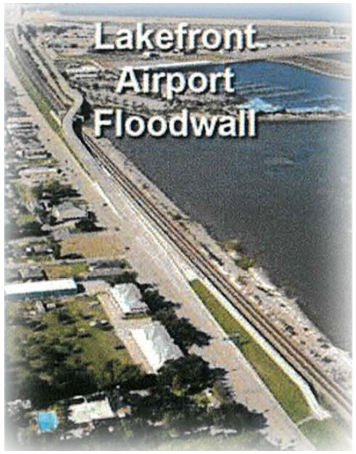
Note huge vertical exaggeration
Dips on beds < 1 degree!

Aquifer Stratas

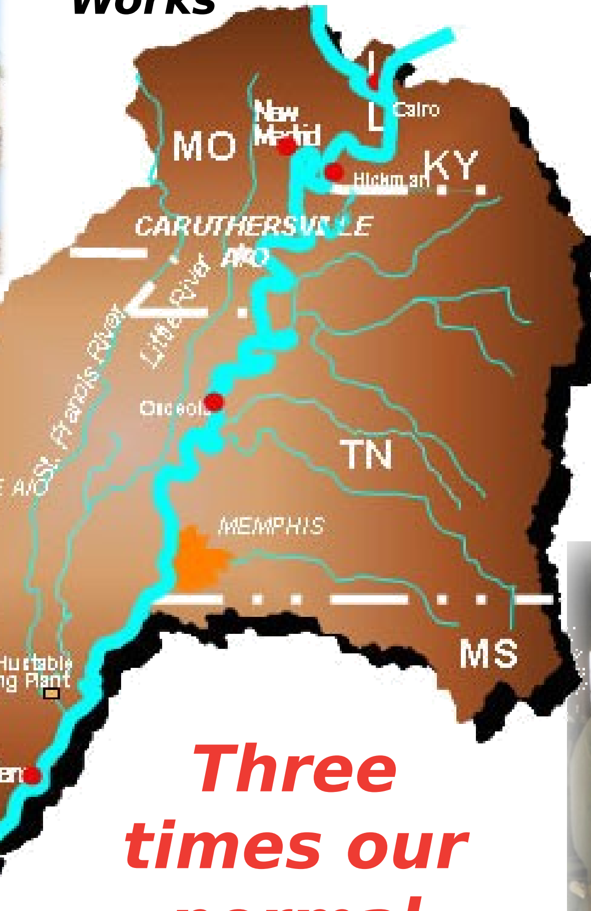
DeSoto County, Mississippi Environmental Infrastructure

Signing the Project Partnership Agreement with DeSoto County Government leaders in December 2008

Civil Works


Lakefront
Airport
Floodwall

Gulf Coast Recovery


MO
New Madrid
Cairo
Hickman
KY
CARUTHERSVILLE A/O
Little River
St. Francis River
Osceola
TN
WYNNE A/O
MEMPHIS
AR
MS
White River
W.G. Huxtable Pumping Plant
Helena

Global War on Terror

ARRA

Three times our normal workload